

Supporting device for grinding ceramic elements

Background of the invention

(1) Field of the invention

5 This invention relates to a supporting device for grinding ceramic elements, especially a supporting device which having at least one or more driving wheels to drive the locating pins and the ceramic element to rotate simultaneously so as to increase the grinding accuracy and prevent the locating pins and the ceramic element from wearing out in the grinding process.

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(2) Description of the Prior Art

 At present, the ceramic material is formed into rough blank firstly and grinded into ceramic product for use in various industry generally. Please refer to fig.1A which shows the conventional supporting mechanism 1 for grinding ceramic elements. The object would be grinded 2 (such as ceramic material) have a through hole 3, two ends of the through hole 3 being located respectively by means of a locating pin 4 which is made of tungsten steel. The top and bottom of this object 2 is engaged respectively with the grinding wheel 5 and the driving wheel 6, the object 2 can be driven to rotate by the driving wheel 6 when the driving wheel 6 start rotating , meanwhile the grinding wheel 5 can grind the driven ceramic element 2.

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 The friction force between the ceramic element 2 and the locating pins 4 may cause the ends of the through hole 3 of the ceramic element 2 break away to form a taper shape (such as shown in fig.1B), the broken part 7 of the through hole 3 must be cut away for use. On the other hand, the hardness of the ceramic material is higher than the

locating pins 4, the locating pins 4 would be worn away in the grinding process and must to be replaced with new one generally after grinding pieces of about 500 ceramic elements. Accordingly, the design of the conventional locating pins for fixing ceramic elements will increase the manufacturing cost and lower the production rate.

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Summary of the invention

It is therefore the main object of this invention to provide a supporting device for grinding ceramic elements, the supporting device having a plurality of supporting seats, on each supporting seat having respectively a V-shape locating groove to provide a larger supporting area for supporting the locating pin firmly.

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It is another object of this invention to provide a supporting device for grinding ceramic elements as described as above, wherein two ends of the ceramic element being located with respectively a locating pin, the ceramic element and the locating pins can be driven to rotate simultaneously, there is no wear between the ceramic element and the locating pins in the grinding process so as to increase the grinding accuracy and prevent the locating pins from wearing out quickly.

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Brief description of the drawings

In the drawings, which illustrate the preferred embodiments and modes of operation of this invention, and in which like reference characters designate the same or similar parts throughout the several views:

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Fig.1A to Fig.1C are sectional views showing the conventional supporting device for grinding ceramic elements;

Fig.2 is a perspective view showing a supporting device for grinding ceramic element of

this invention;

Fig.3 is a perspective view showing a supporting seat of this invention; and

Fig.4 is a sectional view showing the supporting seat in Fig.3.

5 **Detailed description of the preferred embodiments**

Please refer to Fig.2 to Fig.4, the present invention, a supporting device for grinding ceramic elements, is composed of two supporting seats 20 installed on the operating table of the grinding machine (not shown in figures), and a rotating mechanism 30 connected to a driving device (not shown in figures).

10 The supporting seats 20 are positioned near to the two ends of the ceramic element 40, each supporting seat 20 having a V-shape locating groove 21 to form a larger receiving area for supporting the locating pin 41. One end of the locating pin 41 is formed into a conical part 42 and can be inserted into one end of the ceramic element 40, the other end of the locating pin 41 being connected to a pushing device (not shown in
15 figures), such that, the pushing device can push the locating pins 41 forwardly to fix the ceramic element 40 firmly.

 The rotating mechanism 30 is composed of a rotating shaft 31, one first driving wheel 32 and two second driving wheels 33, the first driving wheel 31 being installed above and touch the ceramic element 40, the two second driving wheels 33
20 being installed above and touch the two locating pins 41 respectively. Once the driving wheels 32, 33 rotating, the ceramic element 40 and the locating pins 41 can be drove to rotate simultaneously.

 The bottom of the ceramic element 40 touches the grinding wheel 43, such that, the grinding wheel 43 can grind the ceramic element 40 when the ceramic element

40 and the locating pins 41 being drove to rotate by the rotating mechanism 30 simultaneously. Accordingly, there is no wear between the ceramic element 40 and the locating pins 41 in the grinding process, thus the above supporting device for grinding ceramic element can prolong the service life of the locating pins 41 and increase the grinding accuracy.

It is understood by those skilled in the art that the forgoing description is a preferred embodiment of the disclose device and that various changes and modifications may be made in the invention without departing the spirit and scope thereof.